

## WEATHER STATION

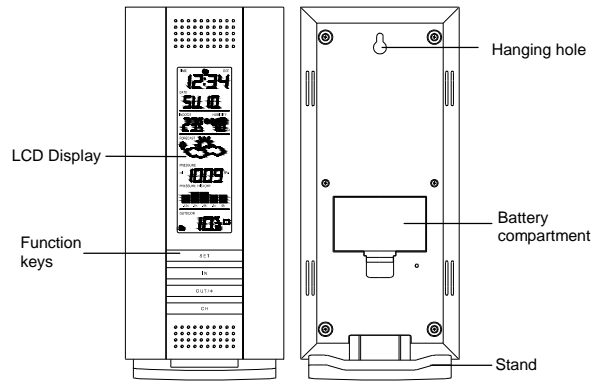
### Instruction Manual

#### INTRODUCTION:

Congratulations on purchasing this state-of-the-art weather station as an example of innovative design and quality piece of engineering. Providing radio controlled time, date, calendar, indoor and outdoor temperature, indoor relative humidity, and air pressure history information. This unit will never keep you guessing on current and future weather conditions. Operation of this product is simple and straightforward. By reading this operating manual, the user will receive a better understanding of the Weather Station together with the optimum benefit of all its features.

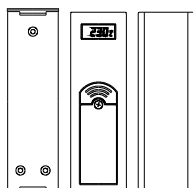
#### FEATURES:

##### The Weather Station



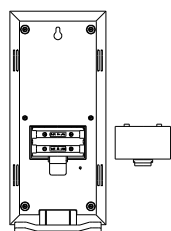
- DCF Radio controlled time with manual setting option
- Time reception ON/OFF (user selectable)
- 12/24 hour time display
- Time zone option  $\pm 12$  hours
- Weekday and day calendar display (year and month only in setting mode)
- Weather forecasting with weather tendency indicator
- Indoor comfort indicator
- Temperature display in  $^{\circ}\text{C}/^{\circ}\text{F}$
- Indoor and outdoor temperature display with MIN/MAX records and time of reception
- Indoor humidity display as RH% with MIN/MAX records
- Relative air pressure hPa/ inHg with adjustable reference value
- Weather icon sensitivity setting
- Relative air pressure history for the past 12 hours (electronic barometer with barometric pressure trend)
- LCD contrast selectable
- Can receive up to 3 outdoor transmitters
- Low battery indicator
- Table standing or wall mounting

## The Outdoor Temperature Transmitter



- Remote transmission of outdoor temperature to Weather Station by 433 MHz
- Shower proof casing
- Wall mounting case
- Mounting at a sheltered place. Avoid direct rain and sunshine

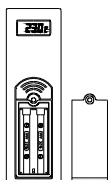
## TO INSTALL AND REPLACE BATTERIES IN THE WEATHER STATION



The Weather Station uses 2 x AA, IEC LR6, 1.5V batteries. To install and replace the batteries, please follow the steps below:

1. Insert finger or other solid object in the space at the bottom center of the battery compartment and lift up to remove the cover.
2. Insert batteries observing the correct polarity (see marking).
3. Replace compartment cover.

## TO INSTALL AND REPLACE BATTERIES IN THE TEMPERATURE TRANSMITTER



- Remote transmission of outdoor temperature to Weather Station by 433 MHz
- Shower proof casing
- Wall mounting case
- Mounting at a sheltered place. Avoid direct rain and sunshine

### Note:

In the event of changing batteries in any of the units, all units need to be reset by following the setting up procedures. This is because a random security code is assigned by the transmitter at start-up and this code must be received and stored by the Weather Station in the first 3 minutes of power being supplied to it.

## BATTERY CHANGE:

It is recommended to replace the batteries in all units on an annual basis to ensure optimum accuracy of these units.



**Please participate in the preservation of the environment.  
Return used batteries to an authorized depot.**

## SETTING UP

1. First, insert the batteries into the Weather station (see **"How to install and replace batteries in the Weather station"** above). Once the batteries are in place, all segments of the LCD will light up briefly. Then the indoor temperature and humidity, the time as 0:00 the date as TH.1., the weather icons (sun and clouds) will be displayed. If the indoor temperature and humidity are not displayed after 15 seconds, remove the batteries and wait for at least 1 minute before reinserting them. Once the indoor data is displayed proceed to step 2.
2. Within 3 minutes of activating the Weather station, place the batteries into the transmitter (see **"How to install and replace batteries in the Temperature transmitter"** above).

3. After inserting the batteries into the transmitter, the Weather station will start receiving data from the transmitter. The outdoor temperature data should then be displayed on the Weather station. If this does not happen after 3 minutes, the batteries will need to be removed from both units and reset from step 1.
4. The Weather station can take up to 3 remote transmitters. If you have purchased additional transmitters, follow step 2 for all extra transmitters. However, ensure that you leave 10 seconds in between the reception of the last transmitter and the set-up of the following transmitter. The Weather Station will number the transmitters in the order of set-up, i.e. the first transmitter will have the temperature and humidity displayed with the number 1 against it and so on.
5. After all the transmitters are set up, there is a testing period, during which the display switches quickly between all the received transmitters at random, according to which random transmission it receives. The process will stop automatically if no keys are pressed for a few minutes.
6. Once the remote data have been received and displayed on the Weather station, the DCF-77 time code reception is automatically started. This takes typically between 3-5 minutes in good conditions. This time period is an excellent opportunity to locate the transmitter(s) in suitable location(s) outdoors. In order to ensure sufficient 433MHz transmission however, this should under good conditions be no more than 100 meters from where the Weather station will be finally positioned (see notes on "**Positioning**" and "**433MHz Reception**").
7. If after 10 minutes, the DCF time has not been received, use the SET key to manually enter a time and date initially. The clock will automatically attempt to receive the DCF time at each full hour. When this is successful, the received time will override the manually set time. The date is also updated with the received time. (Please refer also to notes on "**Radio controlled Time Reception**" and "**Manual Time Setting**").

**Note:**

In the event of changing batteries of the units, ensure the batteries do not spring free from the contacts. Always wait at least 1 minute after removing the batteries before reinserting, otherwise start up and transmission problems may occur.

## RESETTING

The Weather Station and the Temperature transmitter need to be reset when one of the following conditions occur:

- Unsuccessful 433MHz signal reception.
- Malfunction on the units.
- Batteries replacement.

For resetting, remove all batteries from the units. Wait at least for 1 minute before powering up the Weather Station again. Proceed from step 1 in "**Setting Up**".

## DCF RADIO CONTROLLED TIME

The time base for the radio controlled time is a Cesium Atomic Clock operated by the Physikalisch Technische Bundesanstalt Braunschweig which has a time deviation of less than one second in one million years. The time is coded and transmitted from Mainflingen near Frankfurt via frequency signal DCF-77 (77.5 kHz) and has a transmitting range of approximately 1,500 km. Your radio-controlled Weather Station receives this signal and converts it to show the precise time in summer or wintertime.

The quality of the reception depends greatly on the geographic location. In normal cases, there should be no reception problems within a 1500km radius of Frankfurt.

Once the outdoor reception test period is completed, the DCF tower icon in the clock display will start flashing in the upper center. This indicates that the clock has detected that there is a radio signal present and is trying to receive it. When the time code is received, the DCF tower becomes permanently lit and the time will be displayed.

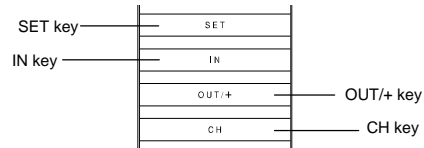
If the tower icon flashes, but does not set the time or the DCF tower does not appear at all, then please take note of the following:

- Recommended distance to any interfering sources like computer monitors or TV sets is a minimum of 1.5 - 2 meters.
- Within ferro-concrete rooms (basements, superstructures), the received signal is naturally weakened. In extreme cases, please place the unit close to a window and/ or point its front or back towards the Frankfurt transmitter.
- During nighttime, the atmospheric disturbances are usually less severe and reception is possible in most cases. A single daily reception is adequate to keep the accuracy deviation below 1 second.

## FUNCTION KEYS:

### Weather Station:

The Weather Station has 4 easy to use function keys:



#### SET key

- Press and hold the key to enter manual setting modes: LCD contrast, time zone, time reception ON/OFF, 12/24 hour display, manual time setting, calendar, temperature °C/°F, pressure hPa / inHg, relative pressure value, and weather icon sensitivity setting
- Reset all MIN/MAX records

#### IN key

- Press to toggle between MAX/MIN and current indoor temperature/humidity data
- Decrease relative pressure value (within manual set mode)

#### OUT/+ key

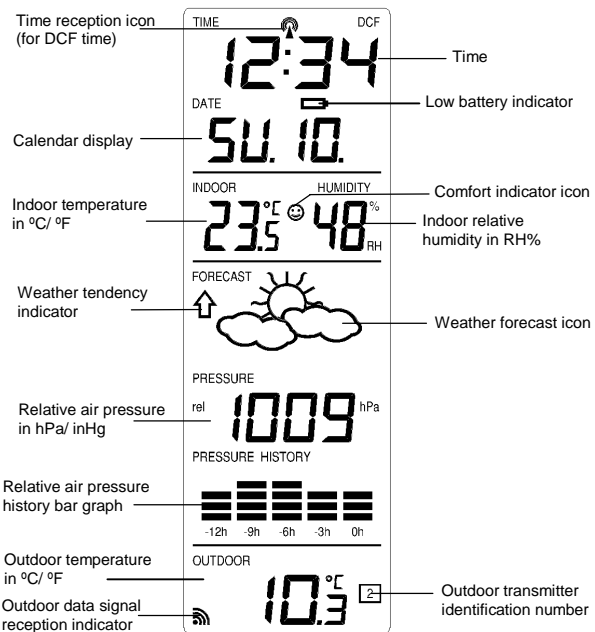
- Press shortly to toggle between MAX/MIN and current outdoor temperature data
- Increase, change, toggle all values in manual set mode

#### CH key

- Exit the manual set mode
- Switch among display of channels (if more than 1 transmitter is used)

## LCD SCREEN:

The LCD screen is split into 4 sections displaying the information for time/calendar, indoor temperature and humidity, weather forecast, air pressure and outdoor temperature.

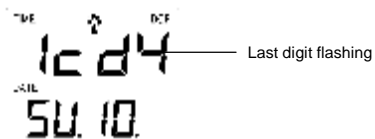


### MANUAL SETTINGS:

The following manual settings can be changed when pressing the SET key for:

- LCD contrast setting
- Time zone setting
- Time reception ON/OFF setting
- 12/24-hour format setting
- Manual time setting
- Calendar setting
- °C/°F temperature setting
- hPa/inHg pressure setting
- Relative air pressure setting
- Weather forecasting icon sensitivity setting

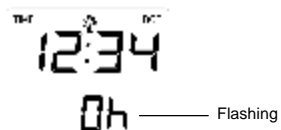
### LCD CONTRAST SETTING:



The LCD contrast can be set within 8 levels, from LCD 0 to LCD7 (Default setting is LCD 4):

1. Press the SET key until the digit starts flashing.
2. Use the OUT/+ key to view all levels of contrast.
3. Select the desired LCD contrast. Confirm with the SET key and enter in the **Time Zone setting**.

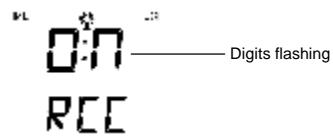
#### TIME ZONE SETTING:



The time zone default of the Weather Station is "0". To set a different time zone:

1. The current time zone value starts flashing.
2. Use the OUT/+ key to set the time zone. The range runs from 0 to -12 and then runs from +12 back to 0 in consecutive 1-hour intervals.
3. Confirm with the SET key and enter the **Time reception ON/OFF setting**.

#### TIME RECEPTION ON/OFF SETTING:



In area where reception of the DCF time is not possible, the DCF time reception function can be turned OFF. The clock will then work as a normal Quartz clock. (Default setting is ON).

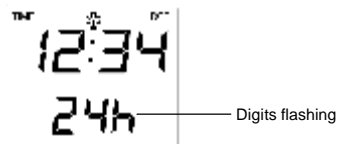
1. The digit "ON" will start flashing on the LCD.
2. Use the OUT/+ key to turn OFF the time reception function.
3. Confirm with the SET key and enter the **12/24-hour format setting**.

#### Note:

**If the Time Reception function is turned OFF manually, the clock will not attempt any reception of the DCF time as long as the Time Reception OFF function is activated.**

**The time reception icon and the "DCF" icon will not be displayed on the LCD.**

#### 12/24-HOUR FORMAT SETTING:



The time display can be selected to show hours in 12-hour or 24-hour settings. (Default 24-Hour)

1. Use the OUT/+ key to toggle between "12H" or "24H".
2. Confirm with the SET key and enter the **Manual time setting**.

#### MANUAL TIME SETTING:

In case the Weather Station cannot detect the DCF-signal (for example due to disturbances, transmitting distance, etc.), the time can be manually set. The clock will then work as a normal Quartz clock.

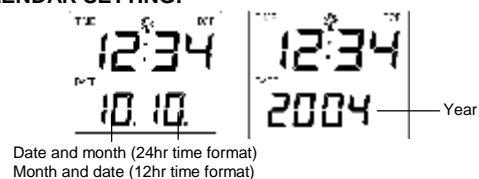


1. The hour digit will start flashing.
2. Use the OUT/+ key to set the hour.
3. Press again the SET key to set the minutes. The minute digits start flashing.
4. Use the OUT/+ key to set the minutes.
5. Confirm with the SET key and enter the **Calendar setting**.

**Note:**

The unit will still try and receive the signal every hour despite it being manually set. When it does receive the signal, it will change the manually set time into the received time. During reception attempts the DCF tower icon will flash. If reception has been unsuccessful, then the DCF tower icon will not appear but reception will still be attempted the following hour.

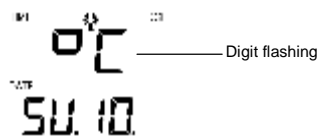
**CALENDAR SETTING:**



The date default of the Weather station is 1. 1. in the year 2004. Once the radio-controlled time signals are received, the date is automatically updated. However, if the signals are not received, the date can also be set manually.

1. The year starts flashing.
2. Use the OUT/+ key to set the year (between year 2003-2029).
3. Press the SET key again to confirm and to enter the month setting. The month starts flashing.
4. Use the OUT/+ key to set the month.
5. Press the SET key again to confirm and to enter the date setting mode. The date starts flashing.
6. Use the OUT/+ key to set the date.
7. Confirm all calendar settings with the SET key and enter the **°C/°F Temperature setting**.

**°C/°F TEMPERATURE SETTING:**

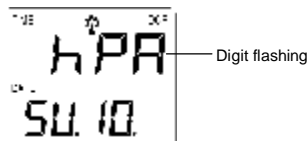


The temperature display can be selected to show temperature data in °C or °F (Default °C).

1. Use the OUT/+ key to toggle between “°C” or “°F”.
2. Confirm with the SET key and enter the **hPa / inHg setting**.

**hPa / inHg PRESSURE UNIT SETTING:**

The pressure display can be selected to show relative air pressure in hPa or inHg (default is “hPa”).

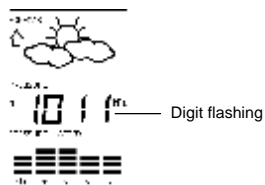


1. Use the OUT/+ key to toggle between "hPa" or "inHg" unit
2. Confirm with the SET key and enter the **Relative air pressure value setting**.

**Note:** Units of weather icon sensitivity and air pressure history are not affected. They are always expressed in hPa.

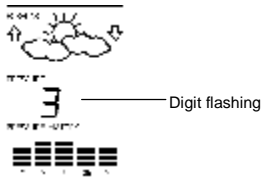
### RELATIVE AIR PRESSURE VALUE SETTING

The default relative pressure value is 1013 hPa (29.92 inHg). This can be manually set to another value within the range of 960 – 1040 hPa (28.35 – 30.72 inHg) for a better reference.



1. The current relative pressure value will start flashing
2. Use the OUT/+ key to increment and IN key to decrement the value. Keep holding the key allows the value to advance faster.
3. Confirm with the SET key and enter the **Weather forecast icon sensitivity setting**.

### WEATHER FORECASTING ICON SENSITIVITY SETTING:



For locations with rapid changes of weather conditions, the weather icons sensitivity can be set to a different level for faster display of weather conditions.

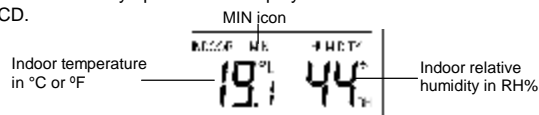
1. The current sensitivity value will start flashing.
2. Use the OUT/+ key to set the weather sensitivity level. There are 3 levels of setting: 2, 3 and 4. The value corresponds to the change of air pressure in hPa before the weather icon will switch to another state. Level 2 is the most sensitive setting, level 4 is the slowest recording setting (default setting is "3").
3. Confirm with the SET key and exit the **Manual settings**.

### TO EXIT THE MANUAL SETTING MODE

To exit the manual setting mode anytime during the manual setting, press the CH key or wait for automatic timeout. The mode will return to normal time display.

### INDOOR RELATIVE HUMIDITY AND INDOOR TEMPERATURE:

The indoor temperature and humidity data, the indoor comfort indicator are automatically updated and displayed on the second section of the LCD.





### THE COMFORT LEVEL INDICATOR:

**Comfortable** : A happy face icon "J" indicating a temperature level between 20°C and 25.9°C and relative humidity reading between 45% and 65%.

**Uncomfortable** : A sad face icon "L" indicating any value outside the comfortable range.

### TOGGLING AND RESETTING THE INDOOR READINGS:

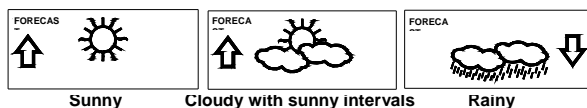
1. Press the IN key to toggle between the indoor current, MAX/MIN temperature and humidity data. The time and dates of the recorded data will also be displayed in the time and calendar sections (for temperature data only).  
Once to show the MAX indoor temperature and humidity data with the recorded time and date.  
Twice to show the MIN indoor temperature and humidity data with the recorded time and date.  
Three times to return to the current displayed values
2. Once the MIN or MAX data is displayed, press and hold the SET key for 3 seconds to reset the respective MIN or MAX record to current temperature and humidity data, and current time, date display.

**Note:** The MIN or MAX data needs to be reset individually.

### WEATHER FORECAST AND WEATHER TENDENCY:

#### WEATHER FORECASTING ICONS:

Weather icons in the third section of LCD can be displayed in any of the following combinations:



For every sudden or significant change in the air pressure, the weather icons will update accordingly to represent the change in weather. If the icons do not change, then it means either the air pressure has not changed or the change has been too slow for the Weather station to register. However, if the icon displayed is a sun or raining cloud, there will be no change of icon if the weather gets any better (with sunny icon) or worse (with rainy icon) since the icons are already at their extremes.

The icons displayed forecasts the weather in terms of getting better or worse and not necessarily sunny or rainy as each icon indicates. For example, if the current weather is cloudy and the rainy icon is displayed, it does not mean that the product is faulty because it is not raining. It simply means that the air pressure has dropped and the weather is expected to get worse but not necessarily rainy.

#### **Note:**

After setting up, readings for weather forecasts should be disregarded for the next 12-24 hours. This will allow sufficient time for the Weather station to collect air pressure data at a constant altitude and therefore result in a more accurate forecast.

Common to weather forecasting, absolute accuracy cannot be guaranteed. The weather forecasting feature is estimated to have an accuracy level of about 75% due to the varying areas the Weather station has been designed for use. In areas that experience sudden changes in weather (for example from sunny to rain), the Weather Station will be more accurate compared to use in areas where the weather is stagnant most of the time (for example mostly sunny).

If the Weather station is moved to another location significantly higher or lower than its initial standing point (for example from the ground floor to the upper floors of a house), discard the weather forecast for the next 12-24 hours. By doing this, the Weather Station will not mistake the new location as being a possible change in air-pressure when really it is due to the slight change of altitude.

### WEATHER TENDENCY INDICATOR

Working together with the weather icons is the weather tendency indicators (located on the left and right sides of the weather icons). When the indicator points upwards, it means that the air-pressure is increasing and the weather is expected to improve, but when indicator points downwards, the air-pressure is dropping and the weather is expected to become worse.

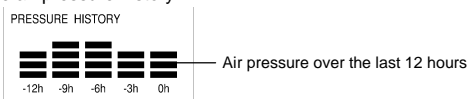
Taking this into account, one can see how the weather has changed and is expected to change. For example, if the indicator is pointing downwards together with cloud and sun icons, then the last noticeable change in the weather was when it was sunny (the sun icon only). Therefore, the next change in the weather will be cloud with rain icons since the indicator is pointing downwards.

**Note:**

Once the weather tendency indicator has registered a change in air pressure, it will remain permanently visualized on the LCD.

### AIR PRESSURE HISTORY (ELECTRONIC BAROMETER WITH BAROMETRIC PRESSURE TREND)

The third section of the LCD also shows the relative air pressure value and the air pressure history.



The bar chart indicates the air pressure history trend over the last 12 hours in 5 steps, 0h, -3h, -6h, -9h, and -12h. The "0h" represents the current full hour air pressure recording. The columns represent the "hPa" (0, ±2, ±4) at specific time. The "0" in the middle of this scale is equal to the current pressure and each change (±2, ±4) represents how high or low in "hPa" the past pressure was compared to the current pressure.

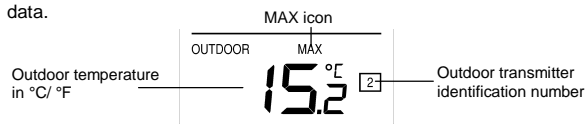
If the bars are rising it means that the weather is getting better due to the increase of air pressure. If the bars go down, it means the air pressure has dropped and the weather is expected to get worse from the present time "0h".

**Note:**

For accurate barometric pressure trends, the Weather Station should operate at the same altitude for example, it should not be moved from the ground to the second floor of the house. Should the unit be moved to a new location, discard readings for the next 12-24 hours.

### OUTDOOR TEMPERATURE

The fourth LCD section shows the outdoor temperature, the reception indicator, the transmitter identification number and the MIN/MAX outdoor data.



## TOGGLING AND RESETTING THE OUTDOOR DATA

1. To toggle between the outdoor current, MAX/MIN temperature data and the times (for temperature data only) they were recorded press the OUT/+ key:  
Once to show the MAX outdoor temperature data with the recorded time and date.  
Twice to show the MIN outdoor temperature data with the recorded time and date.  
Three times to return to the current displayed values.
2. Once the MIN or MAX data is displayed, press and hold the SET key for 3 seconds to reset the respective MIN or MAX record to current temperature data, and current time, date display.

**Note:** The MIN or MAX data needs to be reset individually.

## ABOUT THE OUTDOOR TRANSMITTER

The range of the Temperature transmitter may be affected by the temperature. At cold temperatures the transmitting distance may be decreased. Please bear this in mind when positioning the transmitters. Also the batteries may be reduced in power for the Temperature transmitter.

## CHECKING FOR 433MHz RECEPTION

If the outdoor temperature data is not being received within three minutes after setting up (or outdoor display show “- . -” in the outdoor section of the Weather station after 3 failed attempts during normal operation), please check the following points:

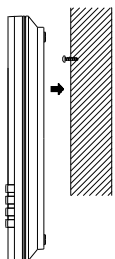
1. The distance of the Weather station or transmitters should be at least 2 meters away from any interfering sources such as computer monitors or TV sets.
2. Avoid placing the transmitters onto or in the immediate proximity of metal window frames.
3. Using other electrical products such as headphones or speakers operating on the 433MHz-signal frequency may prevent correct signal transmission or reception. Neighbors using electrical devices operating on the 433MHz-signal frequency can also cause interference.

### **Note:**

When the 433MHz signal is received correctly, do not re-open the battery cover of either the transmitter or Weather station, as the batteries may spring free from the contacts and force a false reset. Should this happen accidentally then reset all units (see “**Setting up**” above) otherwise transmission problems may occur.

The transmission range is around 100 meters from the Temperature transmitter to the Weather Station (in open space). However, this depends on the surrounding environment and interference levels. If no reception is possible despite the observation of these factors, all system units have to be reset (see “**Setting up**” above).

## POSITIONING THE WEATHER STATION:



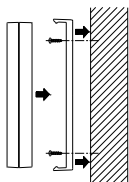
The Weather Station provides the option of table standing or wall mounting the unit. Before wall mounting, please check that the outdoor temperature(s) can be received from the desired location(s). To wall mount:

1. Fix a screw (not supplied) into the desired wall, leaving the head extended out by about 5mm.
2. Remove the stand from the Weather Station by pulling it away from the base and hang the

station onto the screw. Remember to ensure that it locks into place before releasing.

## POSITIONING THE OUTDOOR TEMPERATURE TRANSMITTER

The Outdoor Temperature transmitter is supplied with a holder and three screws for wall mounting. Before securing the transmitter, ensure that the 433MHz signal (outdoor temperature) is properly received.



The mounting surface can affect the transmission range. If e.g. the unit is attached to a piece of metal, it may either reduce or increase the transmitting range. For this reason, we recommend not placing the unit on any metal surfaces or in any position where a large metal or highly polished surface is in the immediate proximity (garage doors, double glazing etc.). Before securing in place, please ensure that the Weather station can receive the

signal from the Outdoor Temperature transmitter at the positions that you wish to situate them.

## CARE AND MAINTENANCE:

- Extreme temperatures, vibration and shock should be avoided as these may cause damage to the units and give inaccurate forecasts and readings.
- When cleaning the display and casings, use a soft damp cloth only. Do not use solvents or scouring agents as they may mark the LCD and casings.
- Do not submerge the units in water.
- Immediately remove all low powered batteries to avoid leakage and damage. Replace only with new batteries of the recommended type.
- Do not make any repair attempts to the units. Return it to their original point of purchase for repair by a qualified engineer. Opening and tampering with the units may invalidate their guarantee.
- Do not expose the units to extreme and sudden temperature changes, this may lead to rapid changes in forecasts and readings and thereby reduce their accuracy.

## SPECIFICATIONS:

### Temperature measuring range:

Indoor	:	-9.9°C to +59.9°C with 0.1°C resolution +14.2°F to +139.8°F with 0.2°F resolution ("OF.L" displayed if outside this range)
Outdoor	:	-29.9°C to +69.9°C with 0.1°C resolution -21.8°F to +157.8°F with 0.2°F resolution ("OF.L" displayed if outside this range)
Indoor humidity range	:	1% to 99% with 1% resolution (Display "- -" if outside this range or temperature is OF.L)
Indoor temperature checking intervals	:	Every 15 seconds
Indoor humidity checking intervals	:	Every 20 seconds
Air pressure checking interval	:	Every 15 seconds
Outdoor temperature checking interval	:	Every 5 minutes
Transmission range	:	up to 100 meters (open space)
<b>Power consumption:</b> (alkaline batteries recommended)		
Weather Station	:	2 x AA, IEC LR6, 1.5V
Transmitter	:	2 x AAA, IEC LR3, 1.5V
<b>Dimensions (L x W x H):</b>		
Weather Station	:	99 x 32.3 x 220mm (stand excluded)
Transmitter	:	40 x 22 x 128mm (wall bracket excluded)

#### **LIABILITY DISCLAIMER**

- The manufacturer and supplier cannot accept any responsibility for any incorrect readings and any consequences that occur should an inaccurate reading take place.
- This product is not to be used for medical purposes or for public information.
- This product is only designed to be used in the home as indication of the future weather and is not 100% accurate. Weather forecasts given by this product should be taken only as an indication and not as being totally accurate.
- The specifications of this product may change without prior notice.
- This product is not a toy. Keep out of the reach of children.
- No part of this manual may be reproduced without written consent of the manufacturer.

#### **R&TTE Directive 1999/5/EC**

Summary of the Declaration of Conformity : We hereby declare that this wireless transmission device does comply with the essential requirements of R&TTE Directive 1999/5/EC.